

BOOK REVIEW

C. B. McQueen. 1990. *Field Guide to the Peat Mosses of Boreal North America*. Pp. xiv + 138 (+ 8 pp. of colored plates). University Press of New England, 17½ Lebanon St., Hanover, NH 03755. (Price: \$22.95, soft cover).

Sphagnum, commonly called “peat moss” or sometimes “bog moss,” is probably the single most important moss in nature and the one of most value to humankind. More uses have been found for *Sphagnum* in everyday and commercial life than for any other moss. It is very common and widespread in the northern part of North America, especially in the boreal regions. According to the author, Cyrus McQueen, who is an authority on *Sphagnum*, the moss covers approximately 500 million acres of North America. The plants are frequently seen and collected by scientists and naturalists who want to know their identity. Therefore, one would think that there would be many manuals such as this one to help identify the approximately 60 species known for the continent, but this certainly is not the case. In fact, this is the first field guide to *Sphagnum* for North America.

The book has a short introduction describing the morphology and terminology of peat mosses as well as their life cycle. Line drawings show types of branch fascicles, capitula and branch leaf arrangements while photographs show a gametophyte with the sporophyte attached and a spore viewed under a scanning electron microscope.

An interesting section on ecology describes the habitat zonation of *Sphagnum* and how this feature can be used to help identify species. First, zonation along a wet-to-dry gradient is discussed; the author explains how certain species only occur in some parts of wetlands depending on the amount of moisture available. A second zonation, along a nutrient gradient, limits distribution of some species within a certain pH range and is closely associated with the wet-to-dry gradient; e.g., the driest habitat, hummock tops, are also the most acidic. A final zonation, based on degree of exposure (i.e., tolerance to sunlight), provides useful identification aids since some species grow only in shaded habitats while others grow only in open habitats. Different types of peatlands, especially bogs, fens and swamps, are defined and briefly discussed. The ecology section ends with a discussion on succession and the different stages in formation of a bog.

Approximately two-thirds of the book is devoted to keys, descriptions, illustrations and color photographs, all aimed at field identification of *Sphagnum*. There are three keys in the book; the only equipment necessary to identify the plants is a 10× to 20× hand lens, tweezers and metric ruler. A random access key is provided as a quick means of identifying 26 species and one variety of the most common *Sphagnum* found in boreal regions of Canada and the United States. The key employs 67 characteristics utilizing macroscopic features of stem and branch leaves, number of spreading branches per fascicle, capitulum, color, exposure, ecology and habitat. The second key, a traditional descriptive key to the same 27 *Sphagna*, follows with the taxa keying out to one of seven sections in the genus, the user then referring to the individual section key to identify the species. Each species has a short description of the plant's field characters, including relevant remarks on how to distinguish it from other species with which it may be confused. Line drawings of a stem leaf and sometimes a branch leaf accompany each description. Finally, the third key, which is also a traditional one and somewhat similar to the second key with its use of sections, includes the majority of taxa (46) found in northeastern North America. A glossary and short list of books about *Sphagnum* and their identification that the author recommends for further reading conclude the book.

The keys are clear and are based on easy-to-use macroscopic characters that should present few problems to the user. The color plates of 30 taxa of *Sphagnum* are an important and useful feature of this attractive book. Although the plates are small, ca. 4 × 6 cm, the photos are generally very clear and the color of the plants in most cases seems to be very close to their color in nature. The small size of the book, ca. 11 × 23 cm, makes it easy to carry which is essential for a field guide.

Amateur naturalists, students and professional biologists, especially ecologists, will find this attractive book to be of immense help in identifying the peat mosses that are so commonly seen in boreal wetlands of North America. Because the majority of the species have a circumpolar distribution, the guide should also be useful outside North America. The book is highly recommended for those learning to identify peat mosses because of the clear and simplified approach.

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